REMARKS

Claims 1-15, 21-25 are pending in this application. Claim 1 has been amended to repeat a recitation from the claim preamble in the body of the claim, to ensure consideration of the recitation. Non-elected Claims 16-20 have been canceled without prejudice to their presentation in an appropriate context, such as in a divisional application. As to new dependent claims 21-25, see, e.g., Applicants' specification at pages 4-5, 14.

In the office action, claims 1-15 have been rejected under 35 U.S.C. 102(e) as being anticipated by Chakravarti et al. ('772).

Applicants respectfully traverse the anticipation rejection.

Applicants' present claim 1 recites a "process for growing amorphous or polycrystalline silicon, comprising: growing a film, including mixing: (A) SiH_4 or a silane derivative, with (B) a compound comprising Si, N and C in any combination, wherein amorphous or polycrystalline silicon is grown."

Chakravarti '772 is directed to depositing a silicon nitride or oxynitride film on a semiconductor substrate, especially to production of high quality silicon oxide and nitride films. (Col. 1, lines 48-49; col. 2, lines 10-11.)

Chakravarti '772 does not disclose a "process for growing amorphous or polycrystalline silicon" as in Applicants' claim 1. In Chakravarti '772, there is not a disclosure that "amorphous or polycrystalline silicon is grown" as in Applicants' claim 1. Rather, Chakravarti '772 discloses, in Figs. 1 and 2 cited by the Examiner: a carbon-enriched silicon oxynitride film deposited from BTBAS, ammonia, and nitrous oxide (Fig. 1; col. 1, lines 65-67); a carbon-enriched silicon nitride film deposited from BTBAS and ammonia (Fig. 2; col. 2, lines 1-3).

Another point of distinction is that Chakravarti '772 does not teach or disclose using a compound comprising Si, N and C (of which BTBAS is an example) with silane or a silane derivative. When Chakravarti '772 teaches to use BTBAS, it is with something other than silane or a silane derivative. For example, for Chakravarti '772's Fig. 1, BTBAS has been used with ammonia and nitrous oxide. For Chakravarti's Fig. 2, BTBAS has been used with ammonia. Ammonia and nitrous oxide are, of course, not silane nor silane derivatives.

Thus, for those several reasons, Applicants' claim 1 is distinguished from and not anticipated by Chakravarti '772.

Additionally, the difference of Applicants' presently claimed invention from the '772 patent is substantial. The '772 patent does not even suggest mixing of a Si/N/C compound (such as BTBAS) with silane or with a silane derivative. In the Background section of the '772 patent, silane is mentioned as a commonly used precursor in CVD of silicon-based films. However, the rest of this section (col. 1, lines 20-45, especially lines 37-40) discusses the drawbacks of using silane precursors. For at least these reasons, the presently claimed invention may be appreciated to be non-obvious over the '772 patent.

Without commenting on each claim, several additional remarks are as follows.

As to claims 3 and 4, the Examiner has cited Fig. 2 of Chakravarti '772. However, that Fig. 2 does not disclose BTBAS with SiH_4 or a silane derivative. Rather, in Chakravarti's '772, BTBAS is used with ammonia. Moreover, in Fig. 2 of the reference, it is carbon-enriched silicon nitride film being made, not amorphous or polycrystalline silicon that is being grown.

As to claim 5, which recites that "a polysilicon film is grown," the Examiner has cited col. 2, lines 10-15 of the reference which mentions "silicon oxide" films. Silicon oxide is not polysilicon.

As to claim 7, which recites mixing silane with BTBAS, the Examiner has cited Figs. 1 and 2 of the reference, neither of which figure involves use of silane (which is SiH_4).

As to claim 8, which recites mixing silane with BTBAS, the Examiner has cited col. 4, lines 45-60, which discloses use of BTBAS but does not disclose use of silane.

As to claim 9, which recites that the silane derivative is disilane, trisilane, hexachloro disilane or dichloro silane, the Examiner cites col. 1, lines 10-25 of the reference, which are in the Background section. However, there is no disclosure in the reference of using disilane or another silane derivative together with BTBAS, for any purpose. Rather, there is one background process mentioned in which silane, disilane or tetraethyl orthosilicate precursors are used to form silicon-based films, which is said to be the most commonly used process. (Col. 1, lines 14-16) There is then another, separate background process mentioned for making silicon nitride films by using tertiary amines, mixtures of dichlorosilane with ammonia, mixtures of silane with ammonia, or mixtures of diethylsilane with ammonia. (Col. 1, lines 17-20.) Silane and disilane in the reference are

only mentioned for particular (non-BTBAS) background processes. The reference does not disclose, as the Examiner implies, use of silane or disilane together with BTBAS.

As to Applicants' independent claim 10, the Examiner has cited Figs. 1 and 2 of the reference. The reference does not disclose using BTBAS (which is an example of a compound (B) in Applicants' claim 10) together with silane (SiH_4) or a silane derivative. The reference only discloses use of BTBAS with ammonia and nitrous oxide (Fig. 1), or with ammonia (Fig. 2). Therefore, Applicants' claim 10 is clearly distinguished from Chakravarti '772.

Wherefore, in view of the above, reconsideration and withdrawal of the anticipation rejection are respectfully requested.

In view of the foregoing, it is respectfully requested that the application be reconsidered, that claims 1-15, 21-25 be allowed, and that the application be passed to issue.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

A provisional petition is hereby made for any extension of time necessary for the continued pendency during the life of this application. Please charge any fees for such provisional petition and any deficiencies in fees and credit any overpayment of fees for the petition or for entry of this amendment to Attorney's Deposit Account No. 09-0458 (IBM Fishkill).

Respectfully submitted,

Mary E. Goulet
Reg. No. 35,884

Whitham, Curtis, & Christofferson, P.C.
11491 Sunset Hills Road, Suite 340
Reston, VA, 20190
Phone: 703-787-9400
Fax: 703-787-7557